

App. Ser. No. 09/992,580
Atty. Dkt. No. MIO 0072 VA

IN THE CLAIMS

Please cancel claims 20, 53, and 55.

Please amend claims 24 and 54.

1-22. (Cancelled)

23. (Original) A method of assembling a printed circuit board, said method comprising:
providing a substrate including first and second surfaces and conductive contacts
included on said first surface;

providing a first semiconductor die including a pair of major surfaces, wherein
one of said pair of major surfaces of said first die defines a first
active surface,

the other of said major surfaces of said first die defines a first
stacking surface,

said first active surface includes a plurality of conductive bond
pads, and

said first stacking surface is devoid of conductive bond pads;

securing said first stacking surface to said first surface of said substrate between
said conductive contacts included on said first surface of said substrate;

providing a second semiconductor die including a pair of major surfaces, wherein
one of said pair of major surfaces of said second die defines a
second active surface,

the other of said major surfaces of said second die defines a second
stacking surface, and

said second active surface includes a plurality of conductive bond
pads;

electrically coupling said first semiconductor die to said second semiconductor
die with a plurality of topographic contacts extending from respective conductive bond

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pads on said second active surface to a corresponding conductive bond pad on said first active surface;

securing a single decoupling capacitor to said second stacking surface;

providing a pair of conductive lines, each of said conductive lines connecting a terminal of said decoupling capacitor, a bond pad on said first active surface, and a conductive contact on said first surface of said substrate;

electrically coupling said bond pad on said first active surface to said second semiconductor die via one of said plurality of topographic contacts extending from respective conductive bond pads on said second active surface to a corresponding conductive bond pad on said first active surface;

arranging said pair of conductive lines such that said decoupling capacitor is connected across V_{ss} and V_{cc} pins of said first and second semiconductor dies;

positioning a printed circuit board such that a first surface of said printed circuit board faces said substrate; and

providing a plurality of topographic contacts extending from said second surface of said substrate to said first surface of said printed circuit board.

24. (Currently amended) A method of assembling a printed circuit board, said method comprising:

providing a substrate including a first surface and conductive contacts included on said first surface;

providing a first semiconductor die including a pair of major surfaces, wherein

one of said pair of major surfaces of said first die defines a first active surface,

the other of said major surfaces of said first die defines a first stacking surface, and

said first active surface includes a plurality of conductive bond pads;

electrically coupling said first active surface to said substrate with a plurality of topographic contacts extending from respective conductive bond pads on said first active surface to corresponding conductive contacts on said first surface of said substrate;

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providing a second semiconductor die including a pair of major surfaces, wherein
one of said pair of major surfaces of said second die defines a
second active surface,
the other of said major surfaces of said second die defines a second
stacking surface,
said second active surface includes a plurality of conductive bond
pads, and
said first stacking surface is devoid of conductive bond pads;
securing said first stacking surface to said second stacking surface;
securing a single decoupling capacitor to said second ~~active~~stacking surface;
providing a pair of conductive lines, each of said conductive lines connecting a
terminal of said decoupling capacitor, a bond pad on said second active surface, and a
conductive contact on said first surface of said substrate;
electrically coupling said conductive contact on said first surface of said substrate
to said first semiconductor die via one of said plurality of topographic contacts extending
from respective conductive bond pads on said first active surface to corresponding
conductive contacts on said first surface of said substrate;
arranging said pair of conductive lines such that said decoupling capacitor is
connected across V_{DD} and V_{SS} pins of said first and second semiconductor dies;
positioning a printed circuit board such that a first surface of said printed circuit
board faces said substrate; and
providing a plurality of topographic contacts extending from said substrate to said
first surface of said printed circuit board.

25-51. (Cancelled)

52. (Previously presented) A method of stacking a plurality of semiconductor die, said
method comprising:

providing a substrate including a first surface and conductive contacts included on
said first surface;
providing a first semiconductor die including a pair of major surfaces, wherein

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one of said pair of major surfaces of said first die defines a first active surface,

the other of said major surfaces of said first die defines a first stacking surface, and

said first active surface includes at least one conductive bond pad; securing said first stacking surface to said substrate;

providing a second semiconductor die including a pair of major surfaces, wherein

one of said pair of major surfaces of said second die defines a second active surface,

the other of said major surfaces of said second die defines a second stacking surface, and

said second active surface includes at least one conductive bond pad;

electrically coupling said first semiconductor die to said second semiconductor die with at least one topographic contact extending from a conductive bond pad on said second active surface to a conductive bond pad on said first active surface;

securing at least one decoupling capacitor to said second stacking surface; and

providing a pair of conductive lines, each of said conductive lines connecting a terminal of said decoupling capacitor, a bond pad on said first active surface, and a conductive contact on said first surface of said substrate.

53. (Cancelled)

54. (Currently amended) A method of stacking a plurality of semiconductor die, said method comprising:

providing a substrate including a first surface and conductive contacts included on said first surface;

providing a first semiconductor die including a pair of major surfaces, wherein

one of said pair of major surfaces of said first die defines a first active surface,

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the other of said major surfaces of said first die defines a first stacking surface, and
said first active surface includes at least one conductive bond pad;
electrically coupling said first active surface to said substrate by at least one topographic contact extending from a conductive bond pad on said first active surface to a conductive contact on said first surface of said substrate;
providing a second semiconductor die including a pair of major surfaces, wherein
one of said pair of major surfaces of said second die defines a second active surface,
the other of said major surfaces of said second die defines a second stacking surface, and
said second active surface includes at least one conductive bond pad;
securing said first stacking surface to said second stacking surface;
securing at least one decoupling capacitor to said second ~~stacking~~active surface;
and
providing at least one conductive line connecting said decoupling capacitor, a bond pad on said second active surface, and a conductive contact on said first surface of said substrate.

55. (Cancelled)

56. (Previously presented) The method as claimed in claim 54 further comprising providing at least one conductive line extending from a bond pad on said second active surface to a conductive contact on said first surface of said substrate.